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**JOBS, JOB CHARACTERISTICS, DIFFERENTIAL
ACCESS TO SOCIAL INFORMATION AND INTRINSIC
SATISFACTION**

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of Business Administration**
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**College of Commerce and Business Administration
University of Illinois at Urbana-Champaign**



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Summary:

See abstract on next page.

ABSTRACT

Hackman and Oldham (1975, 1976) and others have argued that employees' need to grow and develop on the job accounts for relationships observed between job characteristics and intrinsic satisfaction with the job. Salancik and Pfeffer (1977, 1978) have argued that differential access to social information and subsequent construction of distinct social realities can account for this relationship. Using the demographic characteristics of age, sex, race, and education as measures of differential access to social information, the present study finds that these factors 1) explain variance in employees' perception of job characteristics (MPS) beyond that explained by the jobs themselves, and 2) explain variance in intrinsic satisfaction beyond that explained by MPS and by the jobs themselves. In addition, MPS accounts for much more variance in intrinsic satisfaction than that attributable to the "actual" jobs, and the relationship between MPS and intrinsic satisfaction varies significantly by race. It is concluded that differential access to social information plays a role in determining employee perceptions of and responses to their jobs. Need theorists might interpret these results as sources of non-random error for which controls might be introduced. Social information theorists might interpret them as confirmation of their argument and begin to develop more direct measures of differential access to information and of "social constructions" than was possible here.

"Jobs, Job Characteristics, Differential Access to Social Information and Intrinsic Satisfaction: A Field Study"

The most frequently adopted approach to understanding relationships between job characteristics and job satisfaction presumes that attributes of jobs are ontologically "real" rather than socially constructed and that employee reports of these attributes, while imperfect, tend to be randomly distributed around the "true" mean (Hackman and Lawler, 1971; Hackman and Oldham, 1976; Hackman and Oldham, 1975).

This approach has recently been challenged, with implications for both its methodological and epistemological assumptions. Salancik and Pfeffer (1977, 1978) and others have argued that individual growth needs, which are presumed by Hackman, Oldham and others to be the reason why job characteristics such as variety and autonomy are associated with job satisfaction, are in fact social constructs. They therefore are a function of differential access to information and opinions about people and about jobs. O'Reilly et al., for example, contend that "one's frame of reference, as represented by factors such as past experience, present roles and social expectations, may result in different perceptions and definitions of the same job. Workers with comparatively more education, those from different backgrounds or with different aspirations, or those with different reference groups...may also see the same task differently (1979: 64)." He demonstrated this by showing that county health nurses, presumably having identical jobs, reported different amounts of variety, identity, significance, autonomy, and feedback in their jobs. Moreover, these factors, combined into an overall motivating potential score (Hackman and Oldham, 1975), were highly correlated with job satisfaction, $r = .52$, despite little

variation in "objective" job characteristics. This finding is consistent with Weiss and Shaw (1979) and with O'Reilly and Caldwell (1979) who show that perceptions of job characteristics are a function of informational cues as well as "objective" characteristics of the jobs themselves. These studies, however, were conducted in the laboratory. Both used student subjects and, as O'Reilly and Caldwell (1979) note, the artificially short time during which subjects were exposed to the tasks may reduce the impact of the job relative to that of the informational cues about the job.

The present effort, in contrast, is a field study which attempts to assess the relative importance of the "actual" job and of differential experience with and access to information 1) on employee perceptions of job characteristics and 2) on employee feelings of intrinsic satisfaction. In addition, an attempt is made to identify possible moderating effects of differential experience or access to information on the relationship between perceived job characteristics and intrinsic satisfaction. If access to information and opinions results in differential social constructions of reality, "frameworks (O'Reilly, et. al., 1979)," or "theories in use (Argyris and Schon, 1974)," it is possible that some of these "theories" will specify a relationship between characteristics such as autonomy and intrinsic satisfaction, while others won't. It is even possible that some employees will not have been exposed to terms frequently used in questionnaires such as "freedom on the job" or "being satisfied with the extent to which one can use one's skills and abilities" and that they therefore will attribute unusual or unmeasured meanings to these terms. If so, we

might expect these people to exhibit a distinctive pattern of correlations among items intended to assess job characteristics and satisfaction.

Demographic characteristics, age, race, sex, and education, are used here to distinguish among employees who are likely to have or to have had differential experience or access to information and opinions about people and about work. An attempt is made to determine 1) whether these factors contribute to variance explained in employees ratings of their jobs beyond that explained by the jobs themselves, 2) whether they contribute to variance explained in reported intrinsic satisfaction, net of that explained by the jobs themselves and by reported job characteristics and 3) whether, controlling for the strength of growth needs (Hackman and Oldham, 1976), they distinguish among employees who show distinctively different patterns of association between perceived job characteristics and intrinsic satisfaction.

If differential experience with or access to information and opinions appears to make a difference in any of these three respects, a needs-based approach to intrinsic satisfaction may require modification either in theory or in practice. Theoretically, it may be appropriate to subscribe to a theory of needs which allows for social construction processes. In practice, it may be necessary to consider and control for differential experience and access to information and opinions as a source of consistent or possibly correlated measurement error.

Method

Four-hundred sixty-two non-supervisory employees from each of four departments of an assembly and packaging plant responded to

questionnaire items assessing their perceptions of their jobs, their intrinsic satisfaction, and various demographic characteristics. These employees represented 78% of those working in classified jobs in the plant. There were thirty classifications, closely describing actual jobs. Of these different jobs, ten had ten or more employees assigned to them. Together these ten jobs accounted for 379 of the total of 462 employees.

Most of the employees, 161, were packagers. These people sat beside long conveyors, packing product as it came down the lines. These jobs were repetitive and had little or no autonomy. The next largest job category contained machine operators. Employees having these jobs monitored mechanical packaging equipment; however, this required little skill. These jobs also were repetitive and allowed for little freedom in decision-making. Fifteen employees were line leaders, responsible for insuring that the lines ran smoothly. They were not officially supervisors; however, their jobs did require them to exercise judgment and their decisions directly affected everyone on their line. Their jobs, therefore, were relatively high on autonomy and significance. The problems with which these employees had to deal were varied. These jobs, therefore, had a fair amount of variety.

Thirty-two employees were engaged in maintenance activities, sweeping, dusting, and cleaning floors and equipment. These people were called floor helpers. Seventeen of the assemblers, called mixers, were responsible for pre-assembling the material in proper proportions. This included taking material from storage and putting it together in the same place. This frequently included heavy labor,

and eleven other assemblers, called mixers' helpers, were assigned the task of assisting with this chore.

Ten assemblers were classified as "captains." These people monitored assembly machinery at the input end. This required some degree of knowledge, since the machinery had to be calibrated to mesh with differences in the input material. For the most part, however, captains monitored their machines just like the machine operators did. Twelve employees monitored the assembly machines on the output side. These people were called assemblers. Their job included pulling improperly assembled products off of the line. This task required little judgment. For the most part assemblers observed properly assembled products moving along the conveyors.

Employees classified as line attendants monitored and sometimes adjusted dials located in the machinery which actually assembled the product. This machinery was distributed along each conveyor between the captain's position and the input side and the assembler's position on the output side. This job, like the others, required very little judgment and, for the vast majority of the time, was very repetitive.

The only really varied job, beside that held by the line leaders, included such activity as passing out uniforms before every shift, cutting the grass, fumigating, and other varied jobs. Twelve employees performed these sorts of jobs. They tended to be rotated and assigned on an as-needed basis. These employees were appropriately labelled "sundries." Since they frequently worked outside the plant and in a variety of plant locations, they were not closely supervised and exercised a fair amount of autonomy in their jobs.

Each employee was asked to rate their job in terms of the degree of variety, identity, significance, autonomy, and feedback. The specific items were taken from scales developed by the University of Michigan's Survey Research Center (Seashore, et. al., forthcoming). Michigan items also were used to assess the strength of employees' growth needs and intrinsic satisfaction. In addition, each employee was asked to report his or her age, race, sex, and level of education.

Job characteristic scales were combined into a motivating potential (MPS) score according to the formula provided by Hackman and Oldham (1976). MPS then was regressed on nine dummy variables reflecting whether the employee was (1) or was not (0) classified into a particular job category. Then MPS was regressed on these nine dummy variables plus education, age, sex, and two dummy variables reflecting whether the employee was White or Black (the rest of the employees were Mexican-Americans). By observing the increase in variance explained (R^2) when the demographic variables were entered into the equation, it was possible to assess the extent to which they predicted to MPS over and above that predicted by the job classification itself.

Next, intrinsic satisfaction was regressed on MPS and the nine job classification dummy variables. Then the demographic variables were added to determine whether they explained variance in intrinsic satisfaction beyond that explained by the other factors.

Finally, interaction terms were generated by computing different MPS scores for males versus females, those with high education (high school diploma or above) versus low education, those above and below the median age (45), and for Blacks versus non-Blacks and for Whites versus non-Whites. Separate MPS scores were similarly constructed for

those scoring above and below the median on growth needs. For example, a variable was constructed which gave all females their MPS score and gave all males zero. Another variable was constructed which gave all males their MPS score and gave all females zero. By including both of these variables in regression analysis, it was possible to independently assess the impact of MPS for males and for females. By comparing variance explained by this procedure with that explained when the impact of MPS was not allowed to vary by sex, it was possible to determine whether differentiating MPS by sex significantly increases the variance explained in intrinsic satisfaction (cf. Nie *et. al.* 1975: 389). When this procedure was used to assess interaction between MPS and growth needs as they affect intrinsic satisfaction, no interaction effect was found. Growth needs, therefore, were not a confounding factor in the analyses.

Results

Demographic Characteristics and MPS

Results of the hierarchical regressions predicting to MPS are presented in Table 1. By themselves, the job classification variables explain 20% of the variance in MPS. This compares favorably with the degree of association observed between employee and observer ratings of job characteristics. For example, Hackman, Pearce and Wolfe (1978) report a multiple correlation of .49 between job ratings by incumbents and those provided by management. The multiple correlation observed for the data reported here was .45.¹

¹ As expected, the line leaders and "sundries" reported higher MPS scores than did those with the less varied and less autonomous jobs.

Demographic characteristics by themselves accounted for 12% of the variance in MPS. Most of this appeared to be due to employee sex, with males reporting higher MPS than females; however, there was a tendency for the less educated employees to report lower MPS and for Whites to report higher MPS. Demographic characteristics accounted for 5% of the variance in MPS beyond that traceable to the job itself. This increase is statistically significant ($P \leq .05$). Job classification and demographic variables together account for 25% of the variance in MPS. When included with job classification variables, the important demographic variables are education and race. Less educated White employees scored higher on MPS.

Demographics, MPS, and Intrinsic Satisfaction

Results of hierarchical regressions involving intrinsic satisfaction, MPS, and the demographic variables are presented in Table 2. The results are somewhat surprising. Job classification, by itself, does not explain a statistically significant proportion of the variance in intrinsic satisfaction. On the other hand, MPS, by itself, explains 23% of this variance. The demographic variables alone account for 11% of the variance in intrinsic satisfaction. They add 7% beyond that explained by MPS and 4% beyond that explained by MPS and job classification. MPS contributes 15% to variance explained in intrinsic satisfaction beyond that explained by all other factors. MPS and demographic characteristics account for 28% of the variance in intrinsic satisfaction. This figure is not significantly increased by adding job characteristics.

Interactions between Demographic Characteristics and MPS

Results of regressions comparing the impact of MPS on intrinsic satisfaction with and without allowing for interactions between MPS and demographic characteristics are presented in Table 3. Here, the impact of MPS on intrinsic satisfaction is consistent across categories of education, age, and sex. Allowing for interaction effects between MPS and these variables does not significantly increase the variance explained in intrinsic satisfaction. This is not the case, however, for race. The relationship between MPS and intrinsic satisfaction is considerably greater for Whites relative to Blacks. Moreover, the 2% increase in R^2 gained by allowing interaction between race and MPS, while small, is statistically significant ($P \leq .05$). It appears, therefore, that MPS interacts with race to determine employees' level of intrinsic satisfaction.

Summary and Discussion

The Hackman and Oldham (1976) model relating job characteristics to intrinsic satisfaction posits that differences in actual jobs lead to differences in perceived attributes of jobs and that these characteristics--variety, identity, significance, autonomy, and feedback--lead to intrinsic satisfaction. The data raise several questions about this model.

First, differential access to social information, assessed through demographic characteristics, explains a small but significant proportion of the variance in MPS beyond that explained by actual job classification. Second, differential access to social information explains a

small but significant proportion of the variance in intrinsic satisfaction beyond that explained by job classification and MPS taken simultaneously.

Third, MPS explains a large and significant proportion of the variance in intrinsic satisfaction beyond that explained by job classification and demographic characteristics taken simultaneously. This indicates that there are important sources of variation in MPS in addition to job classification and the measures of access to social information considered here.

Finally, differential access to social information--here measured by race--significantly affects the relationship between MPS and intrinsic satisfaction. This suggests that the "frameworks (O'Reilly, 1979)," the "social constructions (Salancik and Pfeffer, 1978)," or the "implicit theories (Argyris and Schon, 1974)," employees use to make sense of their environment vary systematically as a function of differential access to social information and that these "social realities (Weick, 1979)" affect employees' perceptions of and responses to their jobs. This is not to say that "actual" jobs are irrelevant. In fact, the data show them to be highly related to perceived attributes. Reality appears to have an "obdurate" quality which imposes itself from without (Blumer, 1969: 22). However, this does not seem to be the whole story. Access to different sources of social information also plays a role.

It might be argued that the measure of job classification used here is not an adequate measure of "objective" job characteristics. If so, this could account for the fact that demographic variables

account for MPS variance left unexplained by job classification. This explanation is unlikely, given the level of association between job classification and MPS and the high degree of homogeneity of jobs within each classification. Even so, this possibility still does not explain the relationship between demographic characteristics and intrinsic satisfaction, controlling for job classification and MPS. Nor does it explain the differential relationship between MPS and intrinsic satisfaction by race.

The possibility that "objective" job characteristics have not been adequately measured, however, cannot be completely discounted. The results, therefore, should provide incentive for researchers to hierarchically regress intrinsic satisfaction or other outcome measures on employee-perceived and on more "objective" measures of job attributes. The data reported here suggest that employee-based measures of MPS will explain variance in intrinsic satisfaction beyond that explained by the more "objective" measures, but not vice-versa.

Overall, the findings provide evidence that social information plays a role in determining job characteristics and levels of intrinsic satisfaction reported by employees. The results, however, do not help to assess the utility of needs-based theories relative to those based upon social information. Need theorists may interpret the results as attributable to non-random error. It may be necessary, therefore, to control for differential access to information in order to reduce this error. By partialing out error variance due to these factors, it may even be possible to increase the explanatory power of traditional models.

However, the results--especially the observed interaction between race and MPS--are amenable to an alternative interpretation. It is possible that differential access to social information rather than innate needs, is responsible for developing the frameworks employees use to interpret their experience. The Hackman and Oldham model may work very well for those whose "implicit theories" correspond to this formulation. However, there are likely to be other formulations, ones in which concepts analogous to intrinsic satisfaction or growth needs play no part. The data reported here suggest that this may be the case for Black employees.

This possibility should be investigated further in future research. Attempts should be made to identify and assess alternative frameworks and to assess their moderating effects more directly than was done here. It is possible that eventually a contingency theory may be developed along the lines initially suggested by Hackman and Lawler's (1971) concept of growth needs. In the meantime, those holding the more traditional views might usefully reanalyze their data to determine whether employee perceptions of job characteristics explain more variance in outcome measures than that attributable to managers' or others' ratings. The data reported here suggest that the most accurate estimate of the impact of job characteristics might be obtained by assessing the indirect effects of "objective" ratings via employee perceptions rather than by assessing only the direct effect of perceptions.

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TABLE 1

Hierarchical Regressions: MPS on Job Classification
and Demographic Characteristics

Independent Variables	R^2
Job Classifications	.20**
Demographic Characteristics	.12**
Job Classification and Demographics	.25**

**P < .01

TABLE 2

Hierarchical Regressions: Intrinsic Satisfaction on MPS,
Job Classification, and Demographic Characteristics

Independent Variables	R ²
Job Classification	.06
MPS	.23**
Demographic Characteristics	.11**
MPS and Job Classification	.26**
MPS and Demographics	.28**
Job Classifications and Demographics	.15**
MPS, Job Classifications, and Demographics	.30**

**P < .01

TABLE 3

Results of Hierarchical Regressions of Intrinsic Satisfaction on MPS
With and Without Allowing for Interactions Between
MPS and Demographic Characteristics*

Beta Coefficient	MPS Without Interaction	EDUCATION		AGE		RACE		SEX			
		Low	High	Education	Education	Younger	Older	Black	White	Male	Female
		.45**	.46**	.40**	.34*	.50*	.17	.56**	.38**	.45**	
R ²		.29**	.30**	.30**	.31**	.30**					

*All regressions include job classification and demographic variables as controls.

* $\alpha P \leq .05$.



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